10-10-2005

Fall is prime time to sample fields for SCN

Greg Tylka
Iowa State University, gltylka@iastate.edu

Fall is prime time to sample fields for SCN

Abstract
The soybean cyst nematode (SCN) is an extremely damaging and widespread pest of soybean in Iowa. The nematode infests more than 70 percent of the fields statewide. However, SCN usually causes no obvious aboveground symptoms for many years after being introduced into a field. Consequently, many SCN-infested fields in Iowa have not been diagnosed. The lack of symptoms and subsequent missed diagnosis are unfortunate because the key to effective management of SCN is early detection, before large nematode population densities develop. Large nematode population densities can cause severe damage to soybean crops, especially in very dry years, a situation that is occurring in eastern and southeastern Iowa this year.

Disciplines
Agriculture | Plant Pathology

INTEGRATED CROP MANAGEMENT

IC-494 (24) 193 October 10, 2005

Plant Diseases

Fall is prime time to sample fields for SCN

by Greg Tylka, Department of Plant Pathology

The soybean cyst nematode (SCN) is an extremely damaging and widespread pest of soybean in Iowa. The nematode infests more than 70 percent of the fields statewide. However, SCN usually causes no obvious aboveground symptoms for many years after being introduced into a field. Consequently, many SCN-infested fields in Iowa have not been diagnosed. The lack of symptoms and subsequent missed diagnosis are unfortunate because the key to effective management of SCN is early detection, before large nematode population densities develop. Large nematode population densities can cause severe damage to soybean crops, especially in very dry years, a situation that is occurring in eastern and southeastern Iowa this year.

SCN can be detected in soil samples, and fall is an ideal time to sample fields for this pest. Soil samples can be collected any time throughout the fall until a significant snowfall or a hard freeze occurs. Following are some guidelines for sampling fields for SCN:

- Ideally, fields should be sampled using a soil probe.
- Soil cores should be collected to a total depth of 6 to 8 inches.
- Collect soil cores from 15 to 20 places in a zig-zag pattern in a sampling area.
- Collect a separate set of soil cores for each 20 acres or so.
- Combine and mix soil cores, and fill a sample bag with one cup or more of soil.
- Label the outside of each sample bag with a permanent marker.

A soil probe is used to sample fields for SCN. ***(Tom Schultz)***

In this issue:

IOWA STATE UNIVERSITY
University Extension

For fall sampling, it is most logical to sample corn fields in which soybean will be grown in 2006. But samples also can be collected from fields in which soybean was grown in 2005 if unusual plant growth was observed during the season or if unexplained low yields were obtained. One set of soil cores can be collected for both soil fertility and SCN testing.

Numerous private soil testing laboratories in Iowa offer SCN analysis of soil samples. Additionally, the Iowa State University Plant Disease Clinic tests soil samples for SCN. The mailing address of the clinic is 323 Bessey Hall, Department of Plant Pathology, Iowa State University, Ames, IA 50011-1020. The current fee for SCN analysis is $15 per sample.

Several ISU Extension publications on SCN can be obtained free of charge from any county extension office or on the Internet at **www.soybeancyst.info**.

Greg Tylka is a professor of plant pathology with extension and research responsibilities in management of plant-parasitic nematodes.

Soils

Why conservation systems are the right choice this fall

by Mahdi Al-Kaisi, Department of Agronomy, and Mark Hanna, Department of Agriculture and Biosystems Engineering

Energy Use. This year, like any year, producers have to make a decision whether they till or not. This year is especially more challenging for producers to carefully consider their tillage decision because of high fuel prices. Generally, producers know what it takes to operate tillage implements and how much fuel it would take to finish the work. Conventional tillage in general would require approximately 4.1 gal of fuel per acre compared to 1 gal per acre for no-tillage. Field operations in general, including tillage and harvesting, consume about 15 percent of the crop production energy.

Soil Compaction. If fuel cost is not enough reason for farmers to consider no-tillage, several other benefits need to be considered when making a decision this fall whether to till or not to till. The risk of soil compaction and soil nutrient losses, whether through reduced soil tilth or potential soil erosion, is another loss that will add to the total cost of energy and farming input. These losses are real and well documented as reflected in yield, fertilizer energy costs, and environmental risks for soil and water quality.

The decision to till at any time (fall or spring) needs to be carefully planned. When soil conditions are near field capacity, soil aggregates are "lubricated" by water and readily reposition themselves through the air spaces, especially when heavy harvest or tillage equipment is used. In addition, equipment operators need to remember that soil compaction can occur during the application of manure or anhydrous as well when soil moisture exceeds field capacity (maximum amount of moisture retained by the soil). Under wet conditions, the use of heavy equipment, such as tractors, grain carts, and combines, can significantly change soil structure and cause soil compaction. Operating in wet conditions and especially doing extra tillage will increase fuel use per acre as well.

Conservation practices for protecting water quality near Red Rock Lake in central Iowa. ***(USDA Natural Resources Conservation Service)***